Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Previously Presented) A method of determining a binding capacity of a surface, the method comprising:

providing the surface, said surface comprising a first reactive moiety;

contacting the surface with a fluorophore comprising a fluorescent moiety and a second reactive moiety, thereby causing a reaction between the first and second reactive moieties and forming a linking bond or group that binds the fluorescent moiety to the surface;

cleaving the linking bond or group, thereby liberating the fluorescent moiety from the surface;

exposing the liberated fluorescent moiety to exciting radiation;

measuring a signal emitted by the liberated fluorescent moiety; and

calculating the binding capacity of the surface from the strength of the signal.

2. (Previously Presented) The method of claim 1, wherein the linking bond or group comprises a disulfide bond or an aromatic azo bond and wherein the step of cleaving the linking bond or group comprises cleaving the disulfide or aromatic azo bond.

3. (Previously Presented) The method of claim 2, wherein the linking bond or group comprises a disulfide bond.

4. (Withdrawn - Currently Amended) The method of claim 2, wherein the linking bond or group comprises an aromatic azo group represented by the formula:

$-R^2-N=N-$

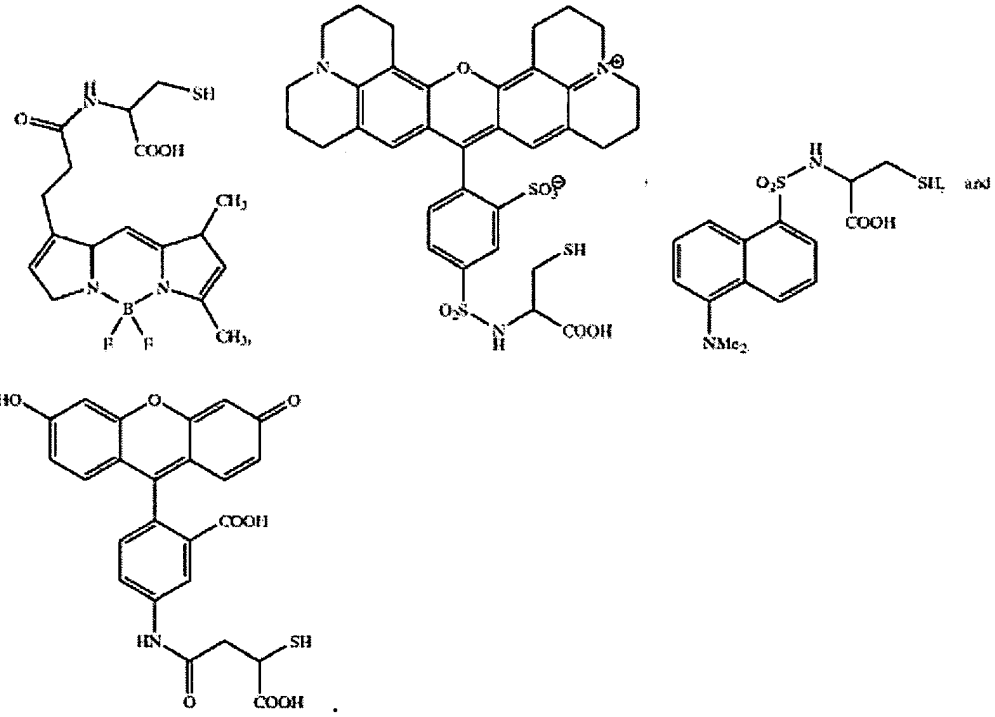
wherein R^2 is a ~~divalent aromatic~~ moiety selected from the group consisting of a heterocyclic groups and electron-deficient aromatic groups.

5. (Currently Amended) The method of claim 2, wherein the fluorophore is a thiol-containing fluorescent compound ~~represented by the formula:~~

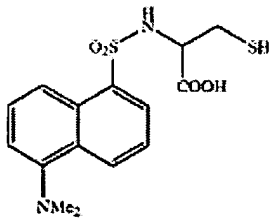
~~Fl—SH~~

~~wherein Fl comprises the fluorescent moiety, and wherein Fl-SH is~~ selected from the group consisting of L-cysteine derivatives bearing fluorescent substituents and compounds wherein ~~Fl~~the fluorescent moiety comprises a fluorescein moiety.

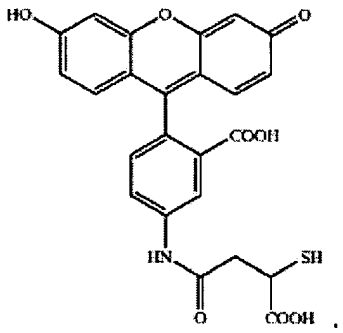
6. (Previously Presented) The method of claim 5, wherein the thiol-containing fluorescent compound is selected from the group consisting of:



7. (Previously Presented) The method of claim 5, wherein the thiol-containing fluorescent compound is



8. (Withdrawn - Previously Presented) The method of claim 5, wherein the thiol-containing fluorescent compound is:



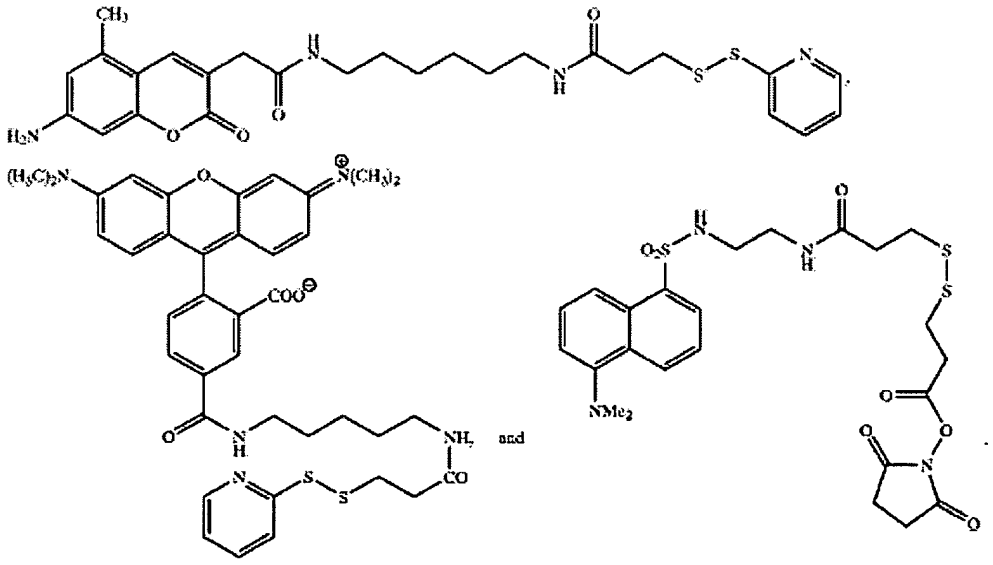
9. (Withdrawn - Previously Presented) The method of claim 2, wherein the fluorophore is a thiol-reactive fluorescent compound represented by the formula:

Fl—S—X

wherein X is selected from the group consisting of Cl, $SO_3(C_1\text{-}C_6$ alkyl), and S—R^2, wherein R^2 is a heterocyclic group or an electron-deficient aromatic group.

10. (Withdrawn - Previously Presented) The method of claim 9, wherein R^2 is a pyridyl group or a phenyl group substituted with one or more electron-withdrawing substituents.

11. (Withdrawn - Previously Presented) The method of claim 9, wherein the thiol-reactive fluorescent compound is selected from the group consisting of:



12. (Withdrawn - Previously Presented) The method of claim 2, wherein the second reactive moiety is bound to the fluorescent moiety by the disulfide bond or aromatic azo bond.

13. (Withdrawn - Previously Presented) The method of claim 12, wherein the second reactive moiety is selected from the group consisting of an amino group, a thiol group, a protected thiol group, and an epoxy group.

14. (Previously Presented) The method of claim 2, wherein the surface is selected from the group consisting of a polymer, a metal, a biomaterial, a ceramic, and a semiconductor.

15. (Withdrawn - Previously Presented) The method of claim 14, wherein the surface is polyurethane.

16. (Previously Presented) The method of claim 2, wherein the first reactive moiety is a thiol, a thiol-reactive group or a group adapted to be converted into a thiol or a thiol-reactive group.

17. (Withdrawn - Previously Presented) The method of claim 2, wherein the first reactive moiety is a thiol group or an amino group.

18. (Withdrawn - Previously Presented) The method of claim 2, wherein the first reactive moiety is a reaction product of a surface thiol group or surface amino group with 5,5'-dithio-bis(2-nitrobenzoic acid) or succinimidyl 3-(2-pyridyldithio)propionate.

19. (Previously Presented) The method of claim 2, wherein the first reactive moiety is a dithio group.

20. (Previously Presented) The method of claim 2, wherein the disulfide bond or aromatic azo bond is cleaved by using a reducing agent selected from the group consisting of dithiothreitol, β-mercaptoethanol, mercaptoethylamine hydrochloride, a borohydride, and a phosphine.

21. (Withdrawn) The method of claim 20, wherein the borohydride is sodium borohydride.

22. (Previously Presented) The method of claim 20, wherein the phosphine is selected from the group consisting of tris(2-cyanoethyl)phosphine, tris(2-carboxyethyl)phosphine and trimethylphosphine.

23. (Withdrawn) A kit for practicing of method of claim 2, the kit comprising a fluorophore.

24. (Withdrawn) The kit of claim 23, wherein the fluorophore comprises the fluorescent moiety and a linking bond precursor.

25. (Withdrawn) The kit of claim 23, wherein the linking bond precursor is adapted to form a cleavable disulfide bond or an aromatic azo group.

26. (Withdrawn) The kit of claim 25, wherein the linking bond precursor is —SH.

27. (Withdrawn - Currently Amended) The kit of claim 25, wherein the linking bond precursor is represented by a formula:

—S—X

wherein X is a member selected from the group consisting of Cl, $SO_3(C_1\text{-}C_6$ alkyl), and S—R^2, wherein R^2 is a heterocyclic group or an electron-deficient aromatic group.

28. (Withdrawn) The kit of claim 23, wherein the fluorophore further comprises a functional group, wherein the functional group is bound to the fluorescent moiety by the cleavable bond and is adapted to react with the reactive moiety to form an uncleavable bond.

29. (Withdrawn) The kit of claim 28, wherein the functional group is a member selected from the group consisting of an amino group, a thiol group, a protected thiol group, and an epoxy group.

30. (Withdrawn) The kit of claim 28, wherein the uncleavable bond is an amide bond.

31. (New) The method of claim 1, further comprising, after contacting the surface with the fluorophore and before cleaving the linking bond or group, a step of washing the surface to remove unbound fluorophore.